

Proposed Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation



Public Workshops
June 2008

California Environmental Protection Agency

 **Air Resources Board**

Overview

- Background
- Proposed Requirements
- Cost and Benefits
- Enforcement
- Next Steps

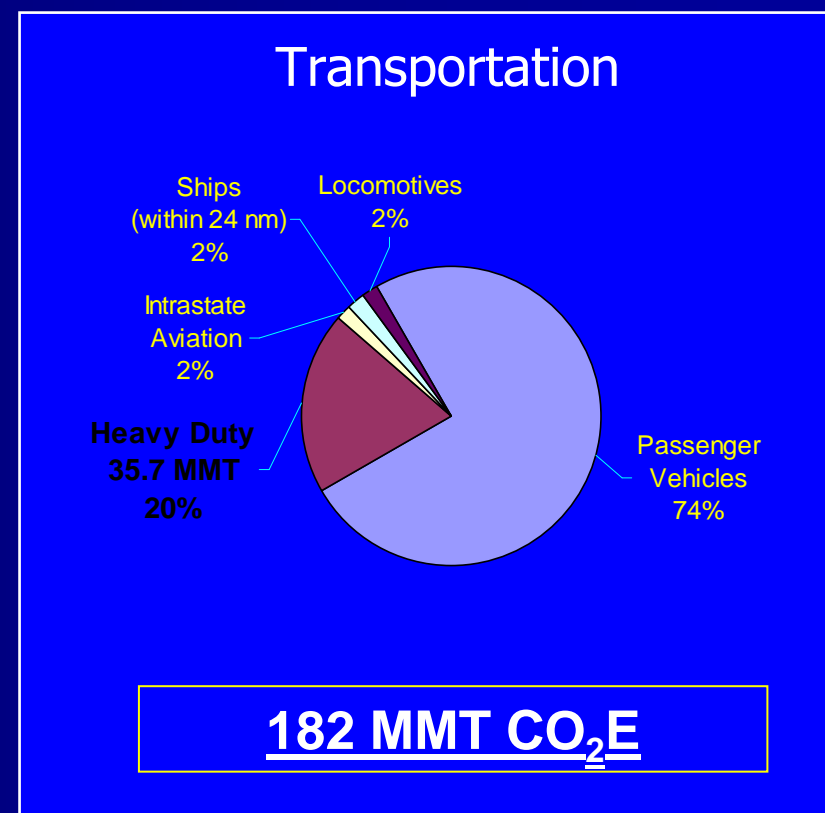
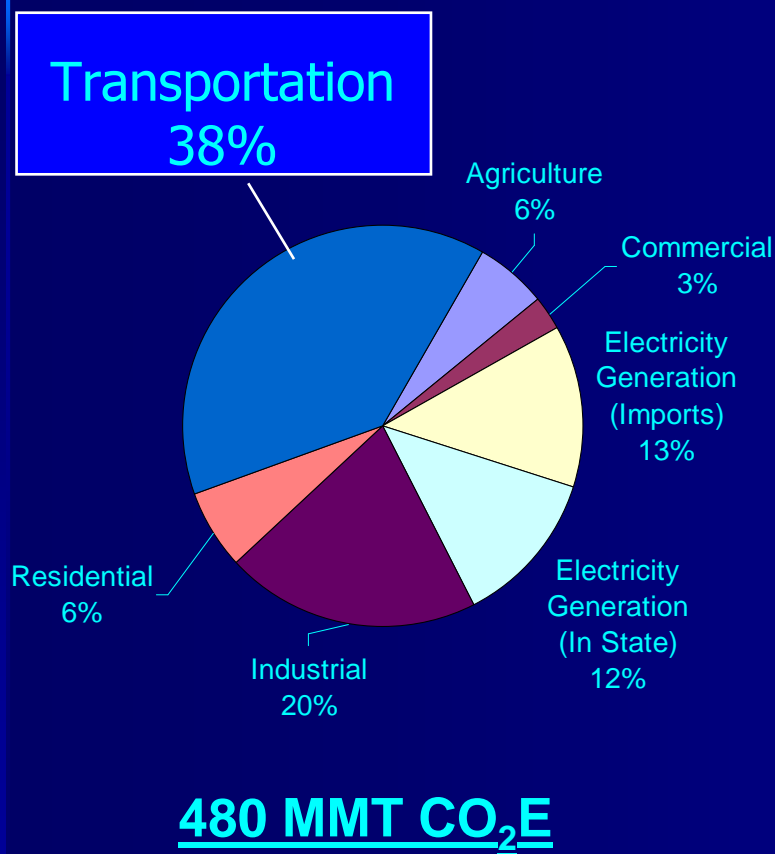
Global Warming Solutions Act of 2006 - AB 32

- Goal to reduce GHG emissions to 1990 levels by 2020
- Mandates the Board to develop appropriate regulations and enforce the new regulations
- Develop early action measures enforceable by 2010 to reduce emissions in the short term



A comparison of Lyell Glacier, Yosemite National Park in 1903 (top) taken by G.K. Gilbert, and 2003 (bottom) taken by Hassan Basagic.

California GHG Emissions (2004)



Goals of Regulation



- Reduce GHG emissions by improving long-haul tractor and trailer efficiency
- Requirements based on US EPA's existing SmartWay Program
 - Improve tractor and trailer aerodynamics
 - Reduce rolling resistance
- Focus on California and out-of-state registered long-haul tractors pulling "box-type trailers"¹

¹Box-type trailer includes dry van, refrigerated van, and curtain-side van

Examples of Aerodynamic Technologies



Manufacturers Addressing Side Skirt Durability



PROPOSED REQUIREMENTS

Applicability

- Long-haul heavy-duty tractors
- Box-type trailers - 53' or longer:
 - Dry van
 - Refrigerated van, and
 - Curtain-side van
- California and out-of-state registered
- Drivers, Owners, Motor Carriers
- California-based businesses that ship or receive freight in 53' or longer box-type trailers

Exemptions

- Authorized emergency vehicles
- Military tactical vehicles
- Short haul tractors
 - Operation within 100 mile radius of home base and maximum of 50,000 annual miles
 - 53' or longer box-type trailer hauled by an exempt short haul tractor
 - Reporting requirements
- Container Chassis
- Drop Frame Vans



Tractor Requirements



2011+ MY Tractor Pulling Box-Type Trailer ($\geq 53'$) **Compliance Date: 1/1/2010**

Tractor Type	Requirement
Sleeper Cab	SmartWay Certified Tractor
Day Cab	SmartWay Approved Tires

Pre-2011 MY Tractor Pulling Box-Type Trailer ($\geq 53'$) **Compliance Date: 1/1/2012**

Tractor Type	Requirement
Day Cab/Sleeper Cab	SmartWay Approved Tires

New Trailer Requirements



2011+ MY 53' or Longer Box-Type Trailer Compliance Date: 1/1/2010

Trailer Type	Requirement	Aero	Tires
Dry Van	SmartWay Certified Trailer, OR Retrofit with SmartWay Approved Technologies to meet SmartWay Spec.	5%	1.5%
Refrigerated Van		4%	1.5%
Curtain-side van		5%	1.5%

Existing Trailer Requirements



Pre-2011 MY 53' or Longer Box-Type Trailer Compliance Date: 1/1/2014

Phase-in compliance schedule for fleets with 20+ trailers

Trailer Type	Requirement	Aero	Tires
Dry Van	Retrofit with SmartWay Approved Technologies	5%	1.5%
Refrigerated Van		4%	1.5%
Curtain-side Van		5%	1.5%

Existing Trailer Requirements



Phase-in Compliance Schedule

Fleet Size	Date Percent of Fleet is Required to Comply			
	1/1/2011	1/1/2012	1/1/2013	1/1/2014
1 to 19	---	---	---	100%
20+	20%	40%	65%	100%

Trailer Requirements Compliance Example



Trailer Type	To meet the aero requirement	Tires
Dry Van or Curtain-side Van	Side skirts (4%) AND Either a front or rear fairing ($\geq 1\%$), OR	1.5% Low rolling resistance duals or Single wide tires
	Trailer tail fairings (5%)	
Refrigerated Van	Side skirts (4%) OR	
	Trailer tail fairings (5%)	

Maintenance Requirements



- Maintain SmartWay-certified equipment in “Good Operating Condition”,
- Installed SmartWay-certified equipment not in “Good Operating Condition” considered a violation of the regulation subject to penalty in accordance with the regulation

Responsibilities

– Driver

- Ensure vehicle is compliant with the requirements
- Present motor carrier (MC)/broker information and bill of lading upon request by enforcement personnel

– Owners of tractors/trailers

- Responsible for retrofitting vehicle
- Ensure MC/broker information is on dispatched tractor
- Register trailers in ARB database

– Motor Carrier/Broker

- Provide copy of regulation to driver/owner of tractor/trailer
- Dispatch compliant tractor/trailer to California
- Ensure MC/Broker information and bill of lading is on dispatched tractor

– California-based Shippers and Receivers

- Ensure vehicle is compliant with the requirements

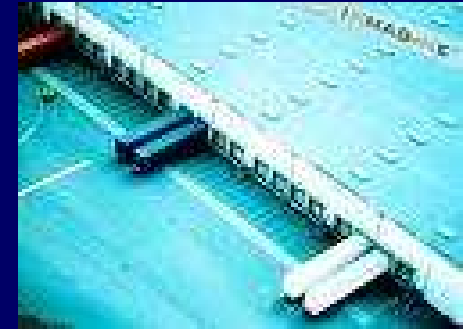
Recordkeeping/Reporting

- Short Haul Tractor Owners (updated annually)
 - Tractor ID (License plate and/or VIN)
 - Annual VMT of Tractors (50,000 mile annual limit)
 - Geographic Area (100 mile radius from base)
- All box-type trailers subject to Regulation required to be reported unless compliant by 2010

Costs and Benefits

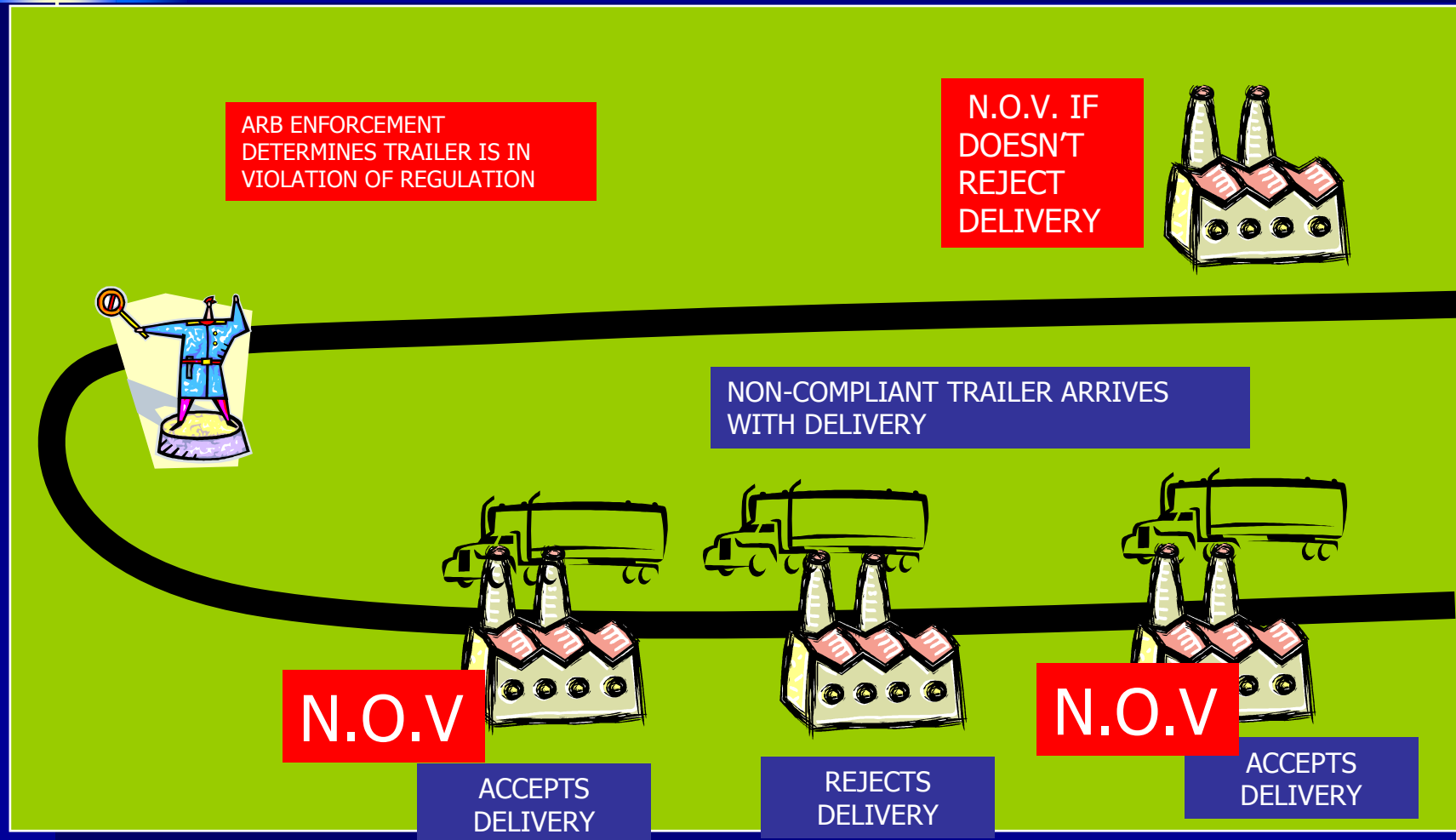
- Substantial fuel savings: 8% to 11%
 - Trailer ~ 6.5% (5% aero, 1.5% tires)
 - Existing Tractor ~ 1.5% (tires)
 - SmartWay Tractor ~ 3.5% - 4.5% (Compared to a tractor with some aerodynamic features such as roof fairings, cab side extenders, sloped hood, etc)*
- Over 1,100 gal/yr @ 6 mpg & 100k mi
- Total installed cost: \$7,000 to \$9,000
- Total payback period up to 2 years
 - Diesel fuel costs @ \$4/gallon
 - Longer payback for multiple trailers

Enforcement



- Loading Dock and Roadside Enforcement
 - Driver
 - Truck and Trailer Owners
 - Motor Carrier/Broker
 - California Shipper/Receiver of Freight
- Focus of Compliance Through California Shippers/Receivers
 - More equitable for trucking industry and leaves choice to them
 - Better enforceability
 - Initial cost more likely to be passed on to CA consumers, rather than truck owners
 - Cost of shipping expected to provide CA consumer savings over life of regulation

Example of How Regulation Will Be Enforced Against California Receivers



Shipper/Receiver Strategies for Compliance

- Inspect tractor and trailer prior to loading/receiving freight
- Contractual language with MC/Broker holding MC/Broker responsible for paying N.O.V. related fines

Issues

- Intermodal Compatibility



- Trailer Inventory

Next Steps

- Public Workshops
 - GHG Regulation Workshops: June 2008
 - Focus on Shippers/Receivers
- Ongoing meetings with Stakeholders
- Presentation to Board for Approval (October 2008)

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